Henry Skinner

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STATED MEETINGS

Of The American Entomological Society will be held at 7.30 o'clock P.M. on the fourth Thursdays of each month, excepting June, July, August, November and December, and on the third Thursdays of November and December.

Communications on observations made in the course of your studies are solicited; also exhibits of any specimens you consider of interest.

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Thomas Lincoln Casey.

Thomas Lincoln Casey, for many years an earnest student of American Coleoptera, died on February 3, 1925, in his 68th year. He was born February 19, 1857, at West Point, New York, the son of Gen. Thomas Lincoln Casey and Emma Weir, and grandson of Major Gen. Silas Casey. He was educated at private schools in Washington; Sheffield Scientific School, Yale, class of 1877; and finally graduated with high honors at the United States Military Academy in 1879. His career in the army included appointment as second lieutenant, corps of engineers, June 13, 1879; first lieutenant, June 17, 1881; captain, July 23, 1888; major, July 5, 1898; lieutenant colonel, September 26, 1906; colonel, September 21, 1909. He was in charge of defense of Hampton Roads, Virginia, during the Spanish-American War, and at many stations in charge of works of river and harbor improvement; assistant astronomer under Prof. Newcomb, Transit of Venus expedition, Cape of Good Hope, 1882; Greer County Commission, Texas, 1886; Mississippi River Commission, 1902-6. He was in charge of U. S. Engineers' exhibit, St. Louis Exposition, 1904; member and engineering secretary, Light House Board, 1906-10; retired from active service March 1, 1912. He married June 1, 1898, Laura Welsh, of Philadelphia, who survives him.

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Physically, he was tall, well built, though somewhat over weight in his later years. His home was in Stoneleigh Court, Washington, D. C., after his retirement from the army, where he was always glad to receive entomological visitors, who found him a gracious host. His occupations, apart from entomology, included billiards at the Cosmos Club, and music at his home, in which he and Mrs. Casey found pleasure. Many daylight hours were devoted to his beetles, studied with the help of many pipes of tobacco.

Possessed of inherited intelligence of high order, provided with the best education schools could supply, fortunately independent of financial worries or overly onerous daily duties, happily married, Casey came into the study of the Coleoptera with an equipment which has seldom been equalled. His field experiences, in consequence of the various stations involved in his army life, included Long Island, Virginia, Mississippi, Texas, California and South Africa. His generous purchases aided in building up one of the most remarkable of private collections, so extensive indeed that he was obliged to rent two apartments in Stoneleigh Court, one for his collection and books, the other for his abode. His library was so large that he had everything, practically, in his home that the literature contained.

The final resting place of both collection and library will be in the United States National Museum, as we are informed by Mr. John D. Sherman, Jr. A conference of specialists to make plans for the reception of the collection has been called for March 3.

With the advantages thus recapitulated he approached the taxonomy of the Coleoptera as logically as he did the engineering problems for which he had been trained. The microscope stood always ready on his working table; under its magnification the smallest beetle was subjected to minute scrutiny and had to agree in every detail with its published description before its identity could be satisfactorily established. If such scrutiny failed to bring it within the characters of some described species, it was set aside for description later as a new species, usually in conjunction with a review of the group to

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which it belonged, at least as far as the group was represented in his collection. Beginning with such a review of Cucujidae in 1884, Casey continued this laborious work for forty years. In that period he published 8621 pages (the greater part at his own expense) and described a large number of species or forms. The descriptions often cover half a page of fine print and for completeness of detail leave nothing to be desired. The synopses that precede the descriptions display in the highest degree his remarkable power of analysis. His work was unaided and always original without compilation from other authors, and he never altered his style of composition, seldom changed his views or retracted his statements. The same attitude of describing what he sometimes called "taxonomic units" as he found them in his collection, leaving the biologist to determine their relation to one another or to previously described species, persisted in spite of all criticism.

Of criticism there was plenty. His efforts were at first encouraged by Dr. George H. Horn, who, following the death of Dr. Leconte, had become by 1884 the principal authority on American Coleoptera. Casey's insistence upon describing as new species individuals which differed in some slight respect, contrary to Horn's opinion that they did not represent "species," alienated the support of the older man. Horn's attitude towards Casey's description was shown by Synonymical Notes in which his specific names were briefly and at times perhaps wrongfully relegated to synonymy. The industry of the younger writer and his capacity for dealing with the more minute and neglected species quickly made it impossible for Horn to cope with the situation.

Following Dr. Horn's lead it became the fashion among coleopterists to deride Casey's work. There was once an entomological gathering at which the percentage of valid species among those he had described was variously estimated by those present, 70% being the highest estimate. Casey seldom troubled himself to refute criticisms and the synonymy alleged by his critics therefore stands in the catalogues, although in candid reply to criticism, he was vigorous in attack, a fighter who neither gave nor asked quarter. He once said that he enjoyed "polite polemics."

Many years must pass before an accurate estimate of the value of his work can be formed. To many coleopterists it must seem incredible that after the exhaustive work of Leconte, Horn, Crotch and others almost half our species waited for Casey's discovery and description. And if their studies cover *Prionus, Buprestis,* or other genera in which his method of describing unique specimens led to bad results, they may feel justified in regarding his "taxonomic units" as probably synonyms in most cases. But when comparison is made with recent studies in *Serica,* where dissection of genitalia has resulted in doubling the number of species, or in *Donacia,* where five years of masterly study of abundant material has produced a similar result, soon to be published, it will be seen that finer discrimination must always result in a great increase in names. When, moreover, it is remembered that a great part of Casey's work was with the Pselaphidae, Scydmaenidae, Staphylinidae and other obscure families which had been greatly neglected up to his time, it is not so surprising that, in the immense product of his long continued industry, he found it necessary to describe thousands of species. A revision of his descriptions with a view to eliminating the names that are unnecessary can be adequately made only by students as well prepared for their work as he was for his and equally willing to devote themselves to a laborious task. And after making all corrections there may still remain as Casey's life work, the greatest contribution to the taxonomy of the Coleoptera that has ever been made by one man.

A list of Col. Casey's writings to 1918 appeared in the last Catalogue of the Coleoptera. His subsequent publications include:

A revisional study of the American Platyninae,

Random Studies among the American Caraboidea,

Some desc. Studies among the American Barinae, Mem. Coleop. IX, 1-529, Apl. 8, 1920.

Studies in the Rhynchophorous subfamily Barinae of the Brazilian Fauna, Mem. Coleop. X, 1-520, Nov. 25, 1922.

Additions to the known Coleoptera of North America, Mem. Coleop. XI, 1-347, May 20, 1924.

CHAS. W. LENG.

Six New Thysanoptera from the Western United States.

By J. Douglas Hood, University of Rochester.

This paper continues the description of the new species which have accumulated in my collection during the past few years. Three of the six forms described below were collected in Colorado in 1918 and 1919 by Mr. L. O. Jackson, formerly of the U. S. Biological Survey; two were given to me by the late Mr. H. M. Russell, whose careful work on thrips for the Bureau of Entomology has made his name known to all entomologists; while the remaining one was taken in Texas in 1911 by the late Mr. Charles A. Hart, formerly Systematic Entomologist of the Illinois State Laboratory of Natural History.

The types are in my collection.

Anaphothrips decolor sp. nov.

♀ (macropterous).—Length about 1.3 mm. Color uniform, pale, yellowish white, with last three abdominal segments shading to pale brownish, extreme tip of segment 10 dark brown; antennal segments 1-4 nearly white, 5 shading to brown at tip, 6-8 dark brown; ocellar pigment wanting; wings colorless. Sixth antennal segment divided; no long bristles on posterior angles of prothorax; tenth abdominal segment divided above in its entire length.

Colorado, L. O. Jackson; taken by sweeping.

Closest to *A. longipennis* Crawford, but easily known by the total absence of long prothoracic bristles and the divided last segment of the abdomen.

Haplothrips purpuratus sp. nov.

♀ (macropterous).—Length about 1.5 mm. Color blackish brown, with fore tarsi, ends of fore tibiae, and antennal segments 3-6 bright yellow; segments 1, 2, 7 and 8 of antennae blackish brown, 2 paler at apex, 5 and 6 slightly infuscate apically; wings colorless, without the usual brown area at base, hairs dark gray, except at tip of wings, where they are abruptly clear white; subhypodermal pigmentation purple.

Head unusually long, about 1.4 times as long as greatest width, broadest behind eyes, sides slightly rounded and somewhat narrowed to base; vertex subconically produced in front of eyes and overhanging insertion of antennae, the anterior

ocellus attaining frontal costa and directed forward; dorsal and lateral surfaces very finely and closely, but not deeply, transversely striate, and set with a few minute, barely distinguishable bristles; postocular bristles blunt but nearly pointed, almost as long as eyes. Eyes small, not protruding. Ocelli anterior in position. Antennae about 1.6 times as long as head; segment 3 slightly shorter than 2, 4, 5 or 6, outer surface less rounded than inner, inner surface without sense cone; 4, 5 and 6 alike in shape, with successively slenderer and shorter pedicels; 7 with pedicel half as wide as apex; 8 subconical, closely united with 7.

Prothorax along median dorsal line less than half as long as head and (inclusive of coxae) about 2.5 times as wide as long, surface finely and closely striate with anastomosing lines except at middle; midlateral bristles wanting, all others blunt or slightly dilated at tips, shorter but somewhat stouter than postoculars, dark in color. Mesoscutum deeply, and exceedingly closely, transversely striate; metascutum similarly, but longitudinally, striate. Wings distinctly narrowed at middle; fore pair with about 22 clear white hairs at tip and devoid of accessory hairs on posterior margin; third subbasal bristle long, pointed, the others about half as long and dilated at tip, all colorless. Tarsal tooth minute.

Abdomen only slightly wider than pterothorax; tergites with a few faint, anastomosing striae. Tube less than one-half as long as head, twice as wide at base as at apex, sides slightly concave. Bristles long and pointed, terminal ones light brown and equal in length to tube, others colorless.

Measurements of holotype (♀): Length 1.49 mm.; head, length 0.240 mm., width 0.174 mm.; prothorax, length along median dorsal line 0.114 mm., width (inclusive of coxae) 0.293 mm.; pterothorax, width 0.308 mm.; abdomen, width 0.332 mm.; tube, length 0.111 mm., width at base 0.066 mm., at apex 0.033 mm.

Antennal segments.....	1	2	3	4	5	6	7	8
Length (microns)...	43	55	48	57	55	51	47	27
Width (microns)....	33	29	23	28	27	24	20	11

Total length of antenna 0.38 mm.

♂ (macropterous).—Much like female, but smaller (length 1.2 mm.) and more slender. Fore legs scarcely more enlarged than in female; fore tarsi with a stout, dark-tipped tooth whose anterior margin is at right angles to axis of tarsus.

Measurements of allotype (♂): Length 1.20 mm.; head, length 0.216 mm., width 0.149 mm.; prothorax, length along median dorsal line 0.101 mm., width 0.255 mm.; pterothorax,

width 0.270 mm.; abdomen, width 0.242 mm.; tube, length 0.090 mm., width at base 0.052 mm., at apex 0.031 mm.

Antennal segments.....	1	2	3	4	5	6	7	8
Length (microns)...	35	51	45	55	54	49	43	26
Width (microns)....	28	27	21	28	25	22	19	10

Total length of antenna 0.36 mm.

Described from one female and one male taken on *Atriplex* sp., at Tempe, Arizona, October 27, 1913, by Mr. H. M. Russell (No. 230).

The absence of accessory hairs from the posterior margin of the fore wings, the produced vertex, the purplish subhypodermal pigmentation, the antennal coloration, the sculpture of the pronotum and the absence of the midlateral bristle make this an easily known species. It is allied to *jonesii, halophilus, malifloris* and the new species described below.

Haplothrips distalis sp. nov.

♀ (macropterous).—Length about 1.5 mm. Color pale brown, with bright red subhypodermal pigmentation; fore tarsi, segment 3 of antennae, and usually the bases of segments 4-6, bright yellow; segments 1, 2, 7 and 8 blackish brown, 2 paler apically, 3 often very slightly infuscate at extreme apex, 4-6 brown in distal three-fifths or more, 4 darkest; wings clear and colorless, except occasionally for a slight brownish cloud at extreme base, hairs dark gray except at tip of wings, where they are abruptly clear white.

Head unusually long, about 1.33 times as long as greatest width, broadest behind eyes, sides slightly rounded and somewhat narrowed to base; vertex subconically produced in front of eyes and overhanging insertion of antennae, the anterior ocellus attaining frontal costa and directed forward; dorsal and lateral surfaces very finely and closely transversely striate and set with a few minute, barely distinguishable bristles; postocular bristles blunt, not at all pointed, about two-thirds as long as eyes and dark in color. Eyes small, not protruding. Ocelli anterior in position. Antennae about 1.6 times as long as head; segment 3 about equal in length to 2 and distinctly shorter than 4, without sense cone on inner surface; segment 4 decidedly the longest and broadest in entire antenna, distinctly stouter than 5 or 6; 7 with pedicel more than half as wide as apex; 8 subconical, closely united to 7.

Prothorax along median line less than half as long as head and (inclusive of coxae) about 2.4 times as wide as long, sur-

face without noticeable sculpture; all usual bristles present, blunt but scarcely dilated at tip, dark brown in color, midlaterals subequal to the two pairs on anterior margin, those at posterior angles longer and subequal to postoculars. Mesoscutum moderately closely transversely striate; metascutum more closely and deeply longitudinally striate. Wings distinctly narrowed at middle; fore pair with 9-11 clear white hairs at tip and with about 9 accessory hairs on posterior margin; third subbasal bristle long, pointed, the others less than half as long and dilated at tip, all colorless. Tarsal tooth minute.

Abdomen only slightly wider than pterothorax; tergites faintly sculptured with anastomosing lines. Tube less than one-half as long as head, nearly twice as wide at base as at apex, sides very slightly concave. Bristles long and pointed, terminal ones light brown and longer than tube, others colorless.

Measurements of holotype (♀): Length 1.50 mm.; head, length 0.221 mm., width 0.165 mm.; prothorax, length along median dorsal line 0.105 mm., width (inclusive of coxae) 0.249 mm.; pterothorax, width 0.296 mm.; abdomen, width 0.306 mm.; tube, length 0.105 mm., width at base 0.059 mm., at apex 0.031 mm.

Antennal segments.....	1	2	3	4	5	6	7	8
Length (microns)....	36	48	48	59	50	45	44	24
Width (microns).....	28	29	25	32	27	24	20	12

Total length of antenna 0.35 mm.

♂ (macropterous).—Much like female, but smaller (length 1.3 mm.) and more slender. Head nearly 1.5 times as long as wide, as broad across eyes as behind them, eyes slightly protruding. Fore legs scarcely more enlarged than in female; fore tarsi with a rather small, stout tooth whose front margin is at right angles to axis of tarsus.

Measurements of allotype (♂): Length 1.29 mm.; head, length 0.215 mm., width 0.146 mm.; prothorax, along median dorsal line 0.093 mm., width (inclusive of coxae) 0.225 mm.; pterothorax, width 0.249 mm.; abdomen, width 0.231 mm.; tube, length 0.105 mm., width at base 0.055 mm., at apex 0.029 mm.

Antennal segments.....	1	2	3	4	5	6	7	8
Length (microns)....	33	47	47	52	46	44	41	24
Width (microns).....	27	26	24	29	26	21	19	12

Total length of antenna 0.33 mm.

Described from 6 females and 5 males, taken on *Atriplex*

sp., at Tempe, Arizona, October 27, 1913, by Mr. H. M. Russell (No. 230).

Readily known from *purpuratus* and its allies by the coloration of the antennae and the enlarged fourth antennal segment. This group of species bears many points of resemblance to *Leptothrips*.

(To be continued.)

Notes on Cerambycidae (Coleoptera).

By A. B. CHAMPLAIN, H. B. KIRK and J. N. KNULL,[1] Pennsylvania Bureau of Plant Industry.

The following notes represent original rearings and observations by the authors which have hitherto not been published in the various papers dealing with the members of the family Cerambycidae. All emergence records are under field conditions unless stated otherwise.

DERANCISTRUS TASLEI Buq.—Adults were reared from the dead dry branches of beech *(Fagus americana)*, chestnut *(Castanea dentata)* and oak, collected at Harrisburg, Pennsylvania. This species seems to prefer the dead tops, although the branches lying on the ground often contain larvae.

TRAGOSOMA DEPSARIUM L. VAR HARRISI Lec.—Adults were found in numbers at Endeavor, Pennsylvania, on July 30, ovipositing in the cracks of barked white pine *(Pinus strobus)* logs, at night.

EBURIA QUADRIGEMINATA Say—This species was found breeding in the hard outer shell of a partly decayed maple at Rockville, Pennsylvania.

ROMALEUM CORTIPHAGUS Craighead—Adults of this *Romaleum* which Dr. Craighead[2] described from the larva were reared from the outer bark of living white oak *(Quercus alba)* and chestnut oak *(Quercus prinus)* at Harrisburg, Pennsylvania. The work was observed also in the outer bark of living *Quercus muhlenbergii* at Columbus, Ohio.

[1] Authors' names arranged alphabetically.

[2] F. C. Craighead, North Amer. Cerambycid Larvae, Dom. of C., Dept. of Ag., Tech. Bull. 27.

ELAPHIDION MUCRONATUM Say—Reared from the dead branches of red maple *(Acer rubrum)* collected at Harrisburg, Pennsylvania.

ANEFLOMORPHA SUBPUBESCENS Lec.—The work of this species is common in white oak *(Quercus alba)* seedlings in sections of Pennsylvania.

Mr. Chittenden[3] has called attention to this insect, the larva of which makes small round holes in a straight line along the whole length of the burrow. Eventually the entire woody fiber is eaten. Before winter the infested seedling is pruned near the level of the ground, and the end of the burrow plugged shut with stringy frass. The winter is spent in the larval stage in the roots of the infested seedling.

PSEUDIBIDION UNICOLOR Rand.—This species was reared from the pruned branches of living walnut *(Juglans nigra)*, beech *(Fagus americana)*, hickory and oak at Hummelstown, Pennsylvania. The branches under observation were pruned usually at or near a node, and fell to the ground in the spring.

HETERACHTES QUADRIMACULATUS Feb.—Adults were reared from the dead branches of tulip poplar *(Liriodendron tulipifera)* collected at Harrisburg, Pennsylvania.

OBRIUM RUFULUM Gahan—The dead branches of ash are often infested with this species, although adults were reared from the bark of a dead black ash tree at Charter Oak, Pennsylvania.

STENOCORUS SCHAUMI Lec.—Inasmuch as no native larvae of this genus have been recorded, it might be advisable to give a few observations on the adults of this species.

During the summer of 1923 male and female adults of this insect, together with the variety *croceus* Leng., were collected on the bases of living ash trees in the vicinity of Columbus, Ohio.

Professor Hine stated that he had collected the same species in Ohio at the bases of ash trees.

STENOCORUS TRIVITTATUS Say—Although the adults of this species are common on the flowers of wild hydrangea *(Hydrangea arborescens)* and acer leaf viburnum *(Viburnum*

[3] F. H. Chittenden, N. S. Div. Ent. Bull. 18.

acerfolium) near Harrisburg, we have never been able to locate the breeding place.

GAUROTES CYANIPENNIS Say—During early summer the adults oviposit in dying trees of *Juglans cinerea,* mulberry and wild cherry. The larvae feed beneath the bark upon the growing tissue, the greater number becoming full-grown by fall. At this time the majority of them leave the trees through holes which they chew in the bark. They drop to the ground beneath the tree and enter the soil to a depth of one to three inches, depending upon conditions, and construct cells in the earth by the movements of their bodies. The winter is spent by the larvae in these pupal cells, and in the spring pupation and transformation occur. The adults emerge the latter part of May or the fore part of June.

Pupae and newly-formed adults may be collected by digging beneath an infested tree at the right time in the spring.

ANTHOPHILAX ATTENUATUS Hald.—Adults of this species were reared May 8 from dead, partly decayed *Acer saccharum* collected at Charter Oak, Pennsylvania. The infested log was partly buried in a large flower pot and the pot then placed in the ground. Wire screen was arranged around the log to trap the adults. The larvae crawled from the log and entered the ground to pupate.

Adults were observed ovipositing on the base of a dead standing beech *(Fagus americana)* near Bathurst, New Brunswick, on June 16.

Larvae of this species have been dug up from time to time, and when placed on the floor they would crawl quickly from place to place. This is a rather unusual habit of *Cerambycid* larvae, although it might be true of many of the forms which go into the ground to pupate.

ANTHOPHILAX MALACHITICUS Hald.—The remains of an adult of this rare species were found in the stomach of a brook trout caught at Charter Oak, Pennsylvania, on June 20.

STRANGALIA SUBHAMATA Rand.—This species was reared from the dead wood of hemlock *(Tsuga canadensis)* collected at Inglenook, Pennsylvania.

LEPTURA EMARGINATA L.—Adults of this species were reared

from the dead wood of tulip poplar *(Liriodendron tulipifera)* and the dry outer shell of a dead hollow sour gum *(Nyssa sylvatica)* collected at Hummelstown, Pennsylvania.

OPHISTOMIS FAMELICA Newn.—An adult was reared from a dead yellow birch *(Betula lutea)* branch, collected at Manada Gap, Pennsylvania.

OPHISTOMIS ACUMINATA Oliv.—Reared from dead *Viburnum dentatum,* ninebark *(Opulaster opulifolius)* and *Alnus* collected at Chambersburg, Pennsylvania.

OPHISTOMIS LUTEICORNIS Fab.—Adults reared June 18 from dead *Viburnum dentatum* collected at Chambersburg, Pennsylvania.

HYLOTRUPES BAJALUS L.—The larvae of this species work in the well-seasoned wood of old frame structures. Pine and hemlock lumber was observed to be attacked by this insect.

A board in a floor of a house at Hummelstown, Pennsylvania, was damaged to such an extent that it had to be replaced.

The timbers in a small bridge over a stream near Inglenook, Pennsylvania, were infested with this insect, and the bridge had to be replaced long before the wood had started to decay.

SEMANOTUS LIGNEA Fab.—This species breeds commonly in dead juniper *(Juniperus virginiana)* in the vicinity of Hummelstown, Pennsylvania. At least a part of the adults mature in the fall, and pass the winter in their pupal cells. The pupal cells are made in the sapwood of the infested sticks, and mature adults have been taken from their cells the latter part of December.

ARHOPALUS FULMINANS Fab.—This species works in the trunks of dead oaks and chestnuts in the vicinity of Harrisburg, Pennsylvania. The pupal cells are made in the sapwood, although before pupation the larvae make openings through the thick bark and then return to the sapwood to transform.

XYLOTRECHUS QUADRIMACULATUS Hald.—This species prunes branches ½ to 2 inches in diameter of beech *(Fagus Americana),* alder and birch throughout Pennsylvania. The small larvae prune the limbs by making a clean circular cut in the sapwood from directly under the thin bark to within a short

distance of the center, thus weakening the branches to such an extent that they are easily broken off by their own weight or by the wind.

In the vicinity of Harrisburg, Pennsylvania, the eggs are laid in crevices and in healed-over injuries on the branches, from the last week in May to the middle of June.

The eggs hatch in about six days, and the young larvae begin feeding in straight lines just beneath the bark, to points usually between two nodes. Here the young larvae, which are about .25 inch long, begin girdling, usually making one circle to complete the work. Limbs ofttimes break and fall while the larvae are completing the girdles; in this case the larvae drop to the ground without completing their work. A greater portion of the larvae, however, fall within the pruned branches, while almost as many remain in the stubs, where they complete their work. While only one larva is necessary to complete a girdle, it is not uncommon to find two or more larvae in a single stub in a girdled limb. After the girdle is completed, the larva continues to work close to the surface for a distance of two or four inches, then it bores deeper into the wood, making a gallery from six to twelve inches in length, always packing frass tightly in the gallery back of itself as it works ahead. At the end of the season the gallery is six to twelve inches long, the full-grown larva passing the winter in a cell at the end. About April, or during the first warm weather, the following year the larva constructs its pupal cell and makes an exit burrow to the outer bark. Pupation takes place about the last week in April or the first week in May, and at the end of twelve to fifteen days the adult emerges.

The adults emerge from the middle of May to the middle of June. Unlike the following species, these adults emerge through the side of the branch from the end of the burrow; the following species emerges at the point where the egg was laid.

(To be continued).

Imperial Entomological Conference.

A conference of the Imperial Entomologists of the British Empire is to be held at London beginning June 9 next. Mr. Arthur Gibson has been appointed to represent Canada.

Some Aquatic Neuropteroid Insects of Lake George.

By JAMES G. NEEDHAM, Cornell University, Ithaca, New York.

During the summer of 1920, while living on Juanita Island, Lake George, New York, engaged in biological work for the State Conservation Commission, incidentally to that work a good many aquatic insects were collected and preserved for future study. Recently I have been going over these collections, and I find them to be mainly neuropteroids and midges. They are mostly well-known species, but the collecting methods used in that work (which was directed toward learning biological conditions affecting the welfare of fishes in the lake) differ from those of ordinary entomological collecting, and I believe they reveal new facts concerning the habitat and habits of these insects that are worthy to be put on record.

Juanita Island is in the "Narrows," near the middle of the lake. Its location, as well as that of other places mentioned in the following pages, is well shown on a map accompanying the Lake George circular that is distributed by the New York State Conservation Commission. It is one of the smaller rock-bound, tree-covered, picturesque islands of that charming lake. Hydrographic maps of its environs accompany a report, "A Biological Survey of Lake George, New York," that was published by the State Conservation Commission in 1922. Most of the records of the following list are from that island, and that is because morning and evening twilight afforded the best opportunities for observations on those crepuscular insects, and these times were mostly spent at camp.

There were, however, two other rather unusual collecting localities. One was the "Coop," a small, sheltered area of shoal water adjacent to Gourd Island, and surrounded by a broken rim of rocky islets. A magnificent bed of long-leaved pondweed *(Potamogeton praelongus)* covered the bottom in 14 feet of water, and this was a rich foraging ground for adult fishes, because it contained innumerable larvae of neuropteroids and midges, as well as snails and scuds. The other locality to which I refer is "Chives Rock," a flat, vertical rock face that rises directly out of the deep water of the lake at the foot of Black

Mountain. The bottom is strewn with great fallen blocks of stone, among which collecting is extremely difficult. It is a lotic situation of an inaccessible sort. But some of the neuropteroids that live among these rocks climb the flat face of the cliff to transform, and leave their cast skins hanging there. These furnish records not otherwise so readily obtainable.

The materials of the following list were collected by my assistant, Mr. C. K. Sibley, and myself. As a list it is very incomplete, both because other work than collecting demanded our time and because the best season for neuropteroid emergence had passed before our arrival at the lake. Yet it will give an idea of what neuropteroids a summer vacation resident on a Lake George island may expect to find.

Four orders of aquatic insects, Plecoptera, Ephemerida, Odonata and Neuroptera, are listed here, with some stray notes on others with which these were associated. The Trichoptera will be recorded by Mr. Sibley elsewhere.

The Diptera of the following lists were determined by Dr. O. A. Johannsen.

PLECOPTERA: Stoneflies.

1. PTERONARCYS sp? A big stonefly of the *P. proteus* group, inhabiting the more rapid and stony lower portions of Shelving Rock Brook, had transformed before our arrival at Lake George and had left a few cast skins clinging to the under surfaces of the larger rocks that rose above the surface of the water. Probably not found in the lake itself, except as the cast skins, loosened from the rocks, drift in from the streams.

2. ACRONEURIA TRIJUNCTA. A single female of this long-lost species was captured on a stone at the edge of the water on Juanita Island on July 20, 1920. A number of detached wings from other specimens probably indicated the spot where early birds had made a breakfast of stoneflies. A number of cast nymphal skins that may well have belonged to this species were found clinging to the vertical surface of Chives Rock several feet above the water.

3. PERLA sp? Cast skins of an undetermined species of this genus were intermingled with the *Acroneuria* skins above

mentioned at Chives Rock, and were several times more numerous than those.

Doubtless other stoneflies of a number of genera might be found in the brooks that come tumbling down the mountain-sides into the lake. Lacustrine stoneflies are found only on wave-washed, rocky shores, where lotic conditions prevail.

EPHEMERIDA: Mayflies.

1. HEXAGENIA BILINEATA. This fine big species is an inhabitant of the deeper waters of the central basin of the lake. Its nymph is a burrower in the bottom ooze. Its season of transformation is July and August. Cast nymphal skins drifted in considerable numbers upon lee shores about Juanita Island in late July and August. A fine, belated, solitary male subimago was taken on that island on August 21.

2. EPHEMERA SIMULANS. This handsome species is earlier in season, having its maximum of abundance on the wing about the latter end of June. Its burrowing nymphs inhabit the mud bottoms of the shallower cross channels and inlets. Two grown nymphs were found in the sandy bottom beside the boat landing of Juanita Island, June 20. Cast nymphal skins were floating everywhere on June 24, and the piers and docks about Glen Island were thickly covered with recently emerged subimagos.

Apparently the nymphs of this species do not at once begin burrowing in the bottom when hatched, for our collections from submerged weed beds yielded considerable numbers of them in various sizes, all less than a fifth grown.

I one day observed a little stilted fly, *Dolichopus batillifer*, that was not uncommon on the beach of the island, feeding upon these nymphs. A submerged silt-covered stump had just been withdrawn from the water, and small nymphs of *Ephemera* were exposed where the silt that had covered them slipped away. The little fly was quick to take advantage of the situation. It would pounce upon a nymph, striking it midships, and then hold it aloft, struggling, impaled upon the proboscis tip, while sucking its blood. I saw this fly also dealing similarly with a small midge larva from the same source.

3. LEPTOPHLEBIA MOLLIS. On the east shore of the lake,

at Flat Iron Point, opposite Log Bay Island, a few males of this species were observed flying in company at the shoulder of the jutting rocks some 15 or 20 feet above the water on the afternoon of June 20, and a few of them were taken. Some nymphs of this genus were found later in the weed beds of the "Coop."

4. CHOROTERPES BASALIS. Three males were taken singly hovering over the channel on the east side of Commissioner's Island on the afternoon of August 25, and another male alighted on our laboratory table on Juanita Island a few days earlier. No nymphs of this genus were observed. Perhaps they live only in tributary streams.

5. EPHEMERELLA sp? Two dusky-winged female subimagos were reared from nymphs collected on the shores of Juanita Island, one on the 23d and the other on the 28th of June. Similar nymphs were found on the *Potamogeton* beds in several places, notably in the "Coop." The species is much smaller than *E. excrucians,* but its nymph is of similar form, having abdominal segments 4 to 8 strongly depressed and broadly expanded and serrate-toothed on the lateral margins, and the gills of segment 4 operculate, covering all behind.

6. CAENIS DIMINUTA. A male of this species was taken at the shore line of Juanita Island on the 20th of August, and some grown nymphs that probably belonged to the same species we found on water weeds in Harris Bay a few days earlier.

7. CHLOEON sp? An undeterminable fragment of a species of this genus was found on Juanita Island on July 14.

8. HEPTAGENIA PULCHELLA. A single male of this species was taken on the north shore of Juanita Island on August 21.

9. HEPTAGENIA INTERPUNCTATA. This shy and delicate mayfly abounds on the rocky shores of Lake George. The flat nymphs cling to the submerged stones and feed upon their coatings of microscopic algae. We collected grown nymphs from the stones about the east shore of Fourteen Mile Island on June 26. The adults fly in the late twilight. So inactive and seclusive are they by day that a true idea of their abundance can be obtained only by observing them in their mating flight. This occurs only in the fading light, when the stars are

coming out to view, and even then they are only to be seen against the background of the lighted western sky. We found a vantage point for watching them in the low, rocky promontory that forms the southwest corner of Juanita Island. Here, during every clear evening in August, we watched them swarming by hundreds, until darkness closed them from view. The swarms were diffuse and the direction of flight was irregular, in curves extending obliquely upward and downward, in and out. The middle of the swarm was some 20 feet above the lake. Males were more numerous than females; the latter were slightly larger and flew a bit more slowly, being burdened with eggs. The eggs are salmon-red, and before they are laid they impart that tint to the body of the female (even in the grown nymphs they do this). They are finally carried extruded in flight, and they often fall off into a net when the female is captured.

The midges of these *Heptagenia* swarms were two common species of *Chironomus;* a rather large brownish species, *C. aberrans,* that was often nearly as abundant as were the mayflies, and a more delicate species, *C. decorus,* that was rather infrequent.

10. CALLIBAETIS sp. Nymphs of an undetermined species of this genus were common in the water weeds about the islands. In the fine *Potamogeton* beds at the "Coop" they were somewhat less abundant than were nymphs of *Leptophlebia,* but were more abundant than those of *Ephemera.*

ODONATA: Dragonflies and Damselflies.

1. GOMPHUS EXILIS. Nymphs were collected from the shores of Juanita and Fourteen Mile Islands in late June.

2. GOMPHUS PLAGIATUS. One nymph skin was collected at the north end of the lake near Baldwin on August 23.

3. HAGENIUS BREVISTYLUS. One nymph was collected in the Narrows at "the Fields" by Mr. C. K. Sibley in late June.

4. BASIAESCHNA JANATA. One nymph was collected from a submerged stump by the dock on Juanita Island July 14.

5. MACROMIA ILLINOIENSIS. One nymph was found sprawling on the sandy bottom at Juanita Island on June 22.

6. DIDYMOPS TRANSVERSA. One cast nymphal skin was sticking to the boat landing at Juanita Island June 22.

7. NEUROCORDULIA OBSOLETA. Four cast skins of this fine species were found on August 24 adhering to the face of Chives Rock where it rises from deep water; another was found on the face of the pier at Baldwin, also facing deep water.

8. TETRAGONEURIA CYNOSURA. A single cast skin of this species was also found on the face of Chives Rock on August 24, and eleven skins and a nymph ready for transformation were found at Northwest Bay on the day preceding.

9. SYMPETRUM SEMICINCTUM. A few adults of this species were constantly flying about the shoals of Pearl Point in August.

10. ARGIA VIOLACEA. This pretty damselfly was not uncommon about Pearl Point and Shelving Rock in August.

11. ENALLAGMA CARUNCULATUM. This was the commoner of the two damselflies seen on Juanita Island. It was collected at Harris Bay also.

12. ENALLAGMA EBRIUM. This was collected on Juanita Island.

In the small marshes adjacent to the lake several species of *Lestes* and *Libellula* were seen, but no nymphs of either of these elsewhere common groups were found by us in the lake itself.

NEUROPTERA.

1. SIALIS INFUMATA. The season of flight for this species was over before we reached Lake George in June, but many dried adults in fragments were still hanging in the spiders' webs that overspread the face of Chives Rock on the 24th of August. Young larvae were not uncommonly found in the weed beds of the Narrows, associated with midge larvae and with mayfly nymphs.

2. CHAULIODES PECTINICORNIS. A grown larva of this species was found on a submerged stump by the dock on Juanita Island July 14.

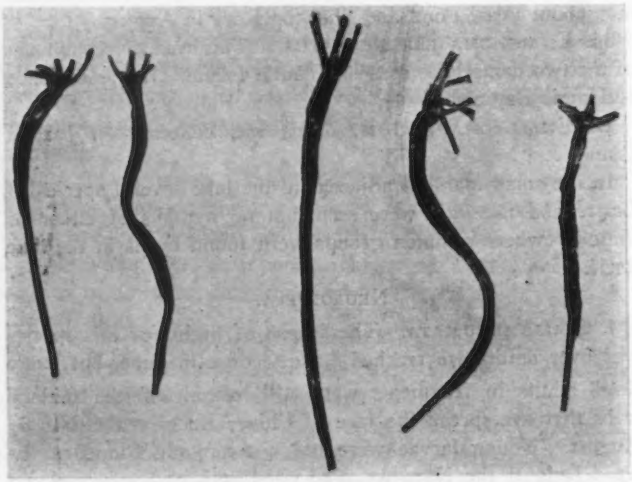
3. CHAULIODES SERRICORNIS. A young larva of this species was found in Northwest Bay.

4. CLIMACIA DICTYONA. During the latter part of July and the whole of August this species could be taken in flight at nightfall on Juanita Island, but it was not very common. Solitary individuals were often seen flying about the borders of a *Heptagenia* swarm, and a few were collected. A few larvae were observed upon some of the fresh-water sponges found in the bays.

An Adelid Gall on Virginia Creeper (Lepidoptera).

By HARRY B. WEISS and ERDMAN WEST, New Brunswick, New Jersey.

While collecting in a moist, shaded forest at Monmouth Junction, New Jersey, on May 26, 1921, it was noted that the leaf petioles of Virginia creeper, instead of being erect



Adelid galls on Virginia creeper.

and straight as they usually are when the plant is growing on the ground, were swollen, misshapen and twisted. Some petioles were enlarged for their entire length, others for four or five inches and some only for about an inch. At that date

most of the galls were about two inches in length. Some petioles exhibited a longitudinal swelling on one side whereas others were enlarged on both sides to twice the diameter of the petiole. In general the galls were irregular, somewhat flattened, longitudinal enlargements of the leaf stems, which resulted in a distorted and curled growth in many cases. Quite frequently the short stems from which the petioles arose were enlarged and curled and occasionally the galls extended close to the bases of the leaflets.

Upon cutting some of them open, they were found to contain from three to six, greenish-white or yellowish-white lepidopterous larvæ feeding in longitudinal channels between the central core and the outer tissue. On May 30, some larvæ were full grown at which time they were about four or five millimeters long and about one millimeter wide. By June 11 many larvæ had become mature and were leaving the galls through small openings which later became ragged tears due to the collapse of the tissue. Before escaping from the gall, each larva clothes itself with a case made from particles of excrement. It then leaves the swollen petiole and crawls beneath the debris on the forest floor. Pupation takes place within the case during the last of August.

As a rule the galls were found only on plants which had no opportunity to climb. On some badly infested petioles, the leaves were undersized, wilted or dead; most of the foliage of infested stems however, did not appear to suffer any ill effects.

For three years unsuccessful efforts have been made to rear the moth so that its identity could be determined. There is apparently only one generation. By June 15 the injury is over and the larvæ have left the stems not to reappear as adults until the middle or third week of the following May, which is about the time small galls are first noticed.

Mr. Carl Heinrich identified the larva as that of a species of Adelidae, possibly *Adela ridingsella* which was described by Clemens in the "Proceedings of the Entomological Society of Philadelphia" in 1864 (vol. II, p. 426). As there does not appear to be any record of a gall on Virginia creeper similar

to the one noted above and figured, these notes are presented in the hope that some one will be able to rear the adult and establish the identity of the species. In addition to Monmouth Junction, galls were found in several areas in the Watchung Mountains, New Jersey.

Notes on Two Butterfly Names Omitted from Recent Lists.

By WM. BARNES and F. H. BENJAMIN, Decatur, Illinois.

While working on a Synonymic Catalogue we encountered names of two diurnal Lepidoptera omitted from most lists. These names seem to have been published in the sense of the Code of the Ninth International Zoological Congress, especially in view of Opinions 53 and 78 of the International Commission. The matter of authorship, and consequently of types, seems more confused than cleared by Opinion 78, which in parts appears to contradict itself, and also apparently contradicts Article 21 of the Code, which seems quite definite in regard to the point that the author of a name is the person "responsible for said name and its indication." We therefore follow Article 21 of the Code and credit authorship to Mead. By following Opinion 78 it would be impossible to determine if the Mead or the W. H. Edwards specimens represented the types, and the authorship would evolve into the complicated formula "W. H. Edwards in Mead in Wheeler."

We have no notes on the location of the Mead specimens. Perhaps some of them ultimately went to the W. H. Edwards Collection, and eventually someone may find specimens which can be considered types. Mead's descriptions are so brief that they scarcely do more than comply with the term "indications," yet the evidence of locality, coupled with comparison with known species, leads us to believe we probably are correct in the following placement of the names. If, however, someone should determine a specimen as probably representing one of the originals covered by Mead, and this does not comply with our present placement of the names, we shall be glad to learn of it and to change our decision.

Meanwhile, as these names are available from the standpoint of nomenclature, we must accept them. Having accepted them, it is important from the standpoint of taxonomy to place them. With the probability that definite types can never be satisfactorily established for the names, it seems advisable to follow the precedence established for the Behr names and others whose types have been lost or destroyed and the evidence afforded by existing literature.

"Melitaea" eurytion Mead.

1875, Mead, in Wheeler, Rept. Geol. & Geog. Surv., V, 759, *Melitaea*. 1878, Strecker, Syn Cat. Macrolepid. N. Am., p. 126, *nubigena, Melitaea*.

An Edwards manuscript name published by Mead.

Strecker's placement of this name as *nubigena* is apparently erroneous. We have not seen *nubigena* except from California; its subspecies *colonia* from Oregon and Washington, intergrading in some California localities with the typical subspecies; and the subspecies *beani* from Western Alberta and British Columbia. In other words, *nubigena* and its subspecies are apparently restricted to the far West and Northwest.

The locality given by Mead, "Colorado," seems to preclude the possibility of a *nubigena* form.

We think the name *eurytion* simply refers to *anicia* Dbldy. & Hew., which was subsequently named *brucei* by W. H. Edwards. Specimens are in the Barnes Collection compared with the type of *anicia* and the series of *brucei* of the Edwards Collection by Dr. J. McDunnough.

Melitaea calydon Mead.

1875, Mead, in Wheeler, Rept. Geol. & Geog. Surv., V. 760, *Melitaea*. 1878, Strecker, Syn. Cat. Macrolepid. N. Am., p. 126, *palla* form, *Melitaea*.

A similar Edwards manuscript name. Mead records twenty-five specimens taken by the Survey. Locality: Turkey Creek Junction, Colorado.

We think this is Colorado *palla*, which we do not consider distinct enough from California *palla* to warrant designation as a distinct subspecies. Should some future worker decide that the Colorado *palla* deserves a differentiating name, then *calydon* would appear available.

A New Lithobiomorphous Chilopod from Uruguay.

By RALPH V. CHAMBERLIN.

Comparatively few representatives of the Lithobiomorpha have been recorded from South America, those previously known, excepting one or two obviously introduced forms, belonging almost exclusively to the Henicopidae. The discovery of a member of the Lithobiidae in Uruguay is consequently a matter of interest and suggests the likelihood that this family will be found to have other representatives in the more southern sections of the continent. There is, of course, the slight possibility that this form may have been introduced, as *Lithobius forficatus* has been into Brazil, *e. g.;* but under any conditions the species represents a distinct new genus.

Kesubius, gen. nov.

A genus resembling *Lithobius* in the restricted sense but differing, *e.g.*, in having the claws of the palpi of the second maxillae bifid, the prosternal teeth only 2+2, and the penult legs of the male provided with a dorsal lobe at the distal end of the fourth joint similar to that of fifth joint in *Nampabius.* The special spine or seta of prosternum is ectal in position. Head with typical marginal interruptions. Ocelli few, multiseriate. Articles of antennae numerous, above twenty-five. Posterior angles of ninth, eleventh and thirteenth dorsal plates produced. Pores present on last four pairs of coxae, uniseriate. Genotype.—*Kesubius syntheticus* sp. nov.

Kesubius syntheticus sp. nov.

Dorsum and head brown. Legs and antennae yellowish. Antennae moderately long; composed of twenty-seven articles which are mostly of moderate length. Ocelli nine in number, arranged in three series; thus, 1+ 3, 3, 2; the ocelli well separated, pale; organ of Tomosvary elliptic, larger than seriate ocelli but smaller than the single occellus. Prosternum not showing a distinct dental plate, the teeth not darker and not, or but little, more chitinous than the subjacent part of prosternum; special spine situated close to ectal edge of outer tooth and a little caudad of it; prosternum shouldered ectad of teeth on each side, the shoulder or corner obtusely angular. Ven-

tral spines of first legs 0, 0, 1, 3, 1. Ventral spines of thirteenth legs 0, 1, 3, 3, 1; dorsal spines, 1, 0, 3, 1, 1. Ventral spines of penult legs, 0, 1, 3, 2, 1; dorsal 1, 0, 3, 1, 0. Dorsal spines of eleventh and twelfth legs, 0, 0, 3, 1, 2. Coxae not laterally armed. In the male the lobe at end of fourth joint of penult legs is small, subcylindric, distally truncate, and extends obliquely dorsocaudad above the plane of articulation with fifth joint. Coxal pores 3, 5, 5, 3.

Length, 15 mm.

Locality.—Uruguay: Montevideo. Type: Male, with anal legs missing, sent for identification by F. Felippone. In collection of the Museum of Comparative Zoology, Cambridge, Massachusetts.

A New Genus of the Siphonaptera.

By CARROLL FOX, Surgeon, U. S. Public Health Service.

Actenophthalmus gen. nov.

Very close to *Rhadinopsylla* Jordan and Rothschild (1912) but easily distinguished by the six pairs of lateral plantar bristles on the fifth tarsal segments of all legs.

Frontal notch distinct; eye absent; a genal comb of five spines of approximately the same length, the upper spine not in line with and diverging from the others; anterior margin of the antennal groove thickened especially at the usual location of the eye; antennal groove not carried to top of head, the internal incrassation absent; labial palpus of five segments, the last segment not as long as the fourth and having near the tip posteriorly a curved bristle as in *Rhadinopsylla* and *Ctenophthalmus;* pronotal comb present; abdominal tergites with apical spines as follows, 2nd. with 6, 3rd. with 8, 4th. with 6 and 5th. with 4, on the two sides taken together; seventh tergite with two antepygidial bristles on each side; pygidium convex; a large patch of hairs on inner side of hind coxa; fifth tarsal segment of all legs with six pairs of stout lateral plantar bristles.

Type, Actenophthalmus heiseri McCoy (1911) as *Ctenophthalmus.* Type specimen in U. S. National Museum, No. 14154. Host unknown. Locality, Mojave, California.

ENTOMOLOGICAL NEWS

PHILADELPHIA, PA., APRIL, 1925.

Hope.

Two entomologists stood before a case filled with books on insects among which one of them was searching for a particular volume. "It's no use" said the other, banteringly; "You might as well as stop now as at any other time. There are ten million species of insects and you'll never get to the end." "Carry out your idea logically," the first replied, "and you might as well never begin." Neither of them stopped.

A week ago the earth and the air were filled with the promise of spring as the thermometer mounted to the seventies. To-night, as these words are written, a high northwestern gale has driven the temperature to seventeen degrees below the freezing point and no insect stirs out of doors.

In both cases the entomologist is sustained by the hope that betterment will come—that he will shed some little light on the obscurity that veils so much of the living world, just as the eternal round of the seasons will again bring spring time and harvest—of insects as of grains.

We desire here to acknowledge our appreciation of the replies to our Editorial in the March number. We are especially glad to get those giving suggestions and opinions as to what would make for the improvement of our journal, and we feel sure they will greatly help us in our work. We thank the following persons for their words of advice and approval: W. S. Blatchley, S. E. Cassino, R. A. Cooley, M. H. Hatch, E. P. Felt, H. B. Weiss and E. A. Klages.

California's Annual Butterfly Show.

The 4th Annual Butterfly Show of the Lorquin Entomological Club was held at the Southwest Museum in Los Angeles, Calif., during February. Fifteen exhibitors displayed parts of their collections and some fifteen thousand moths and butterflies were arranged in cases and cabinets for public approval. Very little Eastern material was represented, practically everything being from the West Coast. Mr. Wm. Schrader's exhibit of *J. cocnia* showing some twenty-five generations thru to form *nigrosuffusa* was of special interest, as were the Calif. group of *Melitaeas* by Geo. Malcolm. A fine display of local *Noctuidae* was arranged by Chas. Hill. Among the commercial displays, that by Mrs. Alice Newcomb received "1st Commercial Prize Ribbon" for Butterfly Arts and Crafts.

J. D. GUNDER, Recorder for 1925.

Entomological Literature

COMPILED BY E. T. CRESSON, JR.

Under the above head it is intended to note papers received at the Academy of Natural Sciences, of Philadelphia, pertaining to the Entomology of the Americas (North and South), including Arachnida and Myriopoda. Articles irrelevant to American entomology will not be noted; but contributions to anatomy, physiology and embryology of insects, however, whether relating to American or exotic species will be recorded.

The numbers in Heavy-Faced Type refer to the journals, as numbered in the following list, in which the papers are published.

All continued papers, with few exceptions, are recorded only at their first installments.

Papers of systematic nature will be found in the paragraph at the end of their respective orders. Those containing descriptions of new genera and species occurring north of Mexico are preceded by an *.

For records of Economic Literature, see the Experiment Station Record, Office of Experiment Stations, Washington. Also Review of Applied Entomology, Series A, London. For records of papers on Medical Entomology, see Review of Applied Entomology, Series B.

The titles occurring in the Entomological News are not listed.

4—Canadian Entomologist. 5—Psyche. 11—Deutsche Ent. Zeitschrift. 18—Internationale Entomolog. Zeit., Guben. 22—Bulletin of Ent. Research. 24—Annales, Societe Ent. de France. 45—Zeit. f. Wissenschftl. Insekentk., Berlin. 50—Proc., U. S. Nat. Mus. 69—Comptes Rendus des Seances, Acad. Sci. Paris. 75—Annals and Mag. of Nat. History, London. 89—Zool. Jahrbucher, Jena. 107—Biologisches Zentralblatt. 130—Ohio Jour. of Sciences. 131—Entomologische Blatter, Berlin. 145—Physis, Buenos Aires. 154—Zoolog. Anzeiger.

GENERAL. Barber, G. W.—The importance of winter mortality in the natural control of the European corn borer in New England, **5**, xxxi, 279-92. **Bruch, C.**—La obra cienti-

fica del Dr. Carlos Bruch. **145,** vii, 216-277. **Hedicke & Hering.**—Vorschlage fur eine terminologie der blattminen. **11,** 1924, 185-99. **Oberthur, C.**—Obituary. **18,** xviii, 299-30. **Schroder, C.**—Handbuch der entomologie. iii, p. 849-1040. **Young, R. T.**—The life of Devils Lake, North Dakota. (Pub. N. Dak. Biol. Sta., 1924, 114 pp., Insecta, p. 94-8.)

ANATOMY, PHYSIOLOGY, MEDICAL, ETC.

Bierens de Haan, J. A.—Reflex und instinkt bei dem ameisenlowen. **107,** xliv, 657-67. **Bodenheimer, F. S.**—Uber die ausnutzung des pflanzenneueunfuhrungen entstandenen freien nahrungsraums durch einheimische insekten. **107,** xliv, 671-5. **Corneli, W.**—Von dem ausbau des sehorgans der blattwespenlarven u. der entwick. des netzauges. **89,** xlvi, Anat., 573-608. **Dallas, E. D.**—Melomelia tarsai en un coleoptero argentino, Scatophilus dasypleurus. **145,** vii, 242-3. **Feuerborn, H. J.**—Das problem der segmentalen gliederung des insektenthorax. **154,** lxii, 1-26. **Heyde, K.**—Die entwicklung der psychischen fahigkeiten bei ameisen und ihr verhalten bei abgeanderten biol. bedingungen. **107,** xliv, 623-54. **Hosselet, C.**—Les eonocytes de Culex annulatus et etude de leur chondriome au cours de la secretion. **69,** clxxx, 399-401. **Mohr, O. L.**—A minute-like III-chromosome recessive in Drosophila melanogaster. (Br. Jour. Exper. Biol., ii, 189-98.) **Parker, H. L.**—Recherches sur les formes post-embryonnaires des Chalcidiens. **24,** xciii, 261-379. **Passerini, N.**—Influenza della qualita alimenti sull accrescimento delle larve e sul metabolismo del Tenebrio molitor. (Atti R. Accad Naz. Lincei, i, 58-9.). **Pawlowsky, E. N.**—Zur ausseren morphologie der skorpione, p. 473. Zur morphol. der weibl. genitalorgane der skorpione, p. 493. **89,** xlvi, Anat., 473-508. **Prell, H.**—Zur biologie der blattschaber (Cionini). **154, lxii,** 33-48. **Rasanen, V.**—Stridulationsapparate bei ameisen besonders bei Formicidae. (Acta Soc. Fauna et Fl. Fennica, xl, No. 8.) **Rittershaus, K.**—Eine neue art von eisprengern bei lamellicornierlarven (Phylloptera horticola und Anomala aenea). **154,** lxii, 31-3. **Trappmann, W.**—Die malpighischen gefasse von Apis mellifica. Anatomie u. phys. des zwischendarmes von A. mellifica. Die bildung der peritropihischen membran von A. mel. Die rectaldrusen von A. mel. Morphol. u. entwicklungsgeschichte von Nosema apis. (Arb. aus der Bio. Reichs. f. Land-i. Forstwirts., Berlin, xii, 565-622.)

ARACHNIDA AND MYRIOPODA. Dias, Libanio e Lisboa.—Lucta contra os escorpioes: The struggle against scorpions. (Mem. Inst. O. Cruz, Rio de Janeiro, xvii, 5-44.) **Gatenby, J. B.**—Notes on Acarine or Isle of Wight bee disease. (Sc. Proc. R. Dublin Soc., xvii, 357-63.)

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DIPTERA. * Aldrich, J. M.—New D. or two winged flies in the U. S. Nat. Mus. **50,** lxvi, Art. 18. *** Curran, C. H.**—Three new D. from Labrador. **4,** lvii, 24-6. *** Dyar & Shannon.**—The mosquitoes of Peary's pole exped. of 1908. (Jour. Wash. Ac. Sc., xv, 77-8.) **Edwards, F. W.**—Mosquito notes.—V. On the identity of certain type specimens, of Wulp and Theobald. **22,** xv, 260-2. *** Hull, F. M.**—A review of the gen. Eristalis in N. Amer. **130,** xxv, 11-45.

COLEOPTERA. Blake, D. H.—Note on the habits of Sphenophorus pontederiae. **5,** xxxi, 311. **Forbes, W. T. M.**—How a beetle folds its wings. **5,** xxxi, 254-8.

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HYMENOPTERA. Reinhard, E. G.—The wasp Hoplisus costalis, a hunter of tree hoppers. (Jour. Wash. Acad. Sci., xv, 107-10.) **Savin, W. M.**—The social wasps—Polistes and Vespa. (Nat. Hist., xxv, 81-86.)

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Doings of Societies.

The Entomological Section of The Academy of Natural Sciences of Philadelphia.

Meeting of January 24, 1924. Director Laurent in the chair. Eleven persons present.

ODONATA.—Dr. Calvert made a communication on the taxonomic characters of odonate larvæ, illustrating his remarks with specimens and lantern slides.

HYMENOPTERA.—Mr. Kisliuk presented larvæ of *Emphytus cinctus* Linn., taken on manetti stock from Ireland at Philadelphia, Nov. 21, 1923.

DIPTERA.—Mr. Hornig read a clipping from a New York newspaper which stated that householders should kill off the flies which come into the house in the fall after the screens

are removed, as these are the progenitors of the next summer's house flies. Mr. Hornig deplored such publicity of an untruth, which works against his campaign for the destruction of the hibernating larvæ in the breeding places.

Meeting of March 27, 1924. Vice-Director R. C. Williams presided. Ten persons present, including J. L. King, of the Japanese beetle laboratory, C. G. Albrecht, of the Federal Inspection Board and J. Kotinsky.

Mr. King reported that he has just heard of the death of Dr. A. D. MacGillivray, on evening of March 24th.

COLEOPTERA.—Mr. Kisliuk reported the confiscation of a quantity of sweet potatoes on a ship from Cuba, infested by the sweet potato weevil. Dr. Calvert referred to a Geography of Pennsylvania by C. B. Trego, 1843, in which under the subject of Insects, Prof. S. S. Haldeman says "Pennsylvania is the most northern limit of *Scarabaeus tityus* . . . we have met with but one mature specimen." Dr. Calvert asked if anyone present knows of other records for this species in Pennsylvania. Several mentioned that it has been recorded from Ohio and Indiana, but could not mention any other records for Pennsylvania.*

Mr. Rehn gave an extremely interesting account of his trip to Costa Rica, in 1923, describing the various localities visited and their particular insect life. The communication was illustrated by specimens and lantern slides.

Meeting of May 22, 1924. Director Laurent presided. Eight persons present.

A circular letter was read announcing the fifth annual summer meeting of the Northeastern Section of the American Association of Economic Entomologists, the program of which scheduled the evening of July 15th in Philadelphia. Dr. Skinner suggested that the Section invite them to hold an informal meeting at the Academy. To that end it was moved and seconded that an invitation be extended to the association to meet here, and a committee of two be appointed to confer with them regarding this matter and make such arrangements as may be appropriate. Dr. Calvert was appointed chairman of this committee with the privilege to select the other member.

Mr. C. F. Greeves Carpenter, of Philadelphia, was elected a Contributor.

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* Further information on the occurrence of this species in Pennsylvania was subsequently obtained and will be published later.—ED.

LEPIDOPTERA.—Mr. Davis exhibited specimens of *Anthocharis genutia* from Neshaminy Falls, Pennsylvania, showing unusually small females.

Dr. Calvert exhibited a specimen of rock showing a species of fossil coral which he received as a possible wing of a fossil dragonfly.

Mr. Rehn gave an interesting talk about his recent collecting trip to Jamaica, illustrating his remarks by lantern slides.

Meeting of September 25, 1924. Director Philip Laurent presided. Six persons present. The death of Dr. David M. Castle, August 5, 1924, in his 82d year, was announced. Dr. Castle was elected a contributor Nov. 25, 1886, and a member, March 24, 1898. A report was presented on the meeting of the Northeastern Section of the Association of American Economic Entomologists, held at the Academy, July 30th. The meeting proved very successful, was well attended and enjoyed by over 75 persons.

LEPIDOPTERA.—Dr. Calvert exhibited a female of *Papilio turnus*, intermediate in coloring between the well known black and yellow forms of this sex, although with black predominating over yellow, taken by himself at Cheyney, Pennsylvania, August 23, 1924. It was considerably battered when taken, the hind wings having lost the tails. It was kept alive in a cage until the night of Aug. 27-28, when it died, having been supplied with fresh flowers of *Buddleya* (which it sucked) and sprays of four of the listed food plants of the larvæ of the species, in the hopes of obtaining eggs, but unsuccessfully. Part of the time a male was confined with it. He also exhibited a pair of the red moth *Galasa rubidana* Wlk., pinned, as nearly as he could imitate, in the position of coitus in which they were taken at Cheyney, July 27, 1924. Tail to tail, their wings spread but slightly, each individual forming an isosceles triangle, base to base, they presented the appearance of a twelve-legged insect with a head at each end.

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OBITUARY.

The death of ANDREAS BANG-HAAS, one of the founders of the firm of Dr. O. Staudinger and A. Bang-Haas, on February 7, 1925, after a short severe illness, in Dresden-Blasewitz, is announced by his son, Otto Bang-Haas.

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Have a number of pamphlets and books on N. A. and exotic Cerambycidae. Will exchange these for certain families of Heteroptera and Tabanidae. G. Chagnon, P. O. Box 521, Montreal, Canada.

Buprestidae.—Will determine and exchange Buprestidae of the world and exchange separata on this family. Dr. Jan Obenberger, Prague II., Václavské námêsti 1700, Museum, Czechoslovakia.

Wanted—Connection with collectors who can furnish me early in the fall living and hibernating pupae of western and southern Papilio and Saturnidae and allied groups. Fertile eggs of Apanteris and Catocala also desired. Max Rothke, 1841 E. Elm St. (R. D. 2), Scranton, Pa.

Wanted—For cash or exchange. Living pupae of butterflies and moths, especially Papilionidae, Sphingidae, Saturnidae, Ceratocampidae. Perfect specimens of the rarer species of Papilionidae, Sphingidae, Cossidae, Hepialidae, Sesidae. The Kny-Scheerer Corporation of America, Department of Natural Science, 119-125 Seventh Avenue, New York, N. Y.

Harvestmen. Will be glad to determine Phalangids from all parts of North America, especially from the South and West. Should be preserved in 90% grain alcohol. C. R. Crosby, Roberts Hall, Ithaca, N. Y.

Wanted for cash at reasonable prices healthy pupae of Samia cecropia and Philosamia cynthia, also other hibernating pupae.—Max Rothke, 1841 East Elm Street, Scranton, Pa., R. D. 2.

Wanted—Living pupae of Actias luna, Hemileuca maia and Basilona imperialis.—Mrs. Robert Milde, Lewiston, Minnesota.

Wanted for cash or exchange, good, healthy living pupae of **T. imperialis.** Must be of good size.—A. J. Potter, East Killingby, Conn.

Wanted—Canadian Entomol, Vol. 2 (1869) to 8 (1876); Vol. 17 (1885), Nos. 5, 9; Vol. 18 (1886), No. 3; Amer. Entomologist, Vol. 1 to 3 (1868-1880); Zoe, Vol. 5, No. 12; Proc. Ent. Soc. Washington, Vol 1 (1899) to 5 (1903); all in exchange for **Cetonides** and **Longicorns** from New Guinea or other countries. Also entomol. literature could be given. Address, Deutsches Entomol. Institut, (Walther Horn), Gossler Str. 20, Berlin-Dahlem, Germany.

I will collect Coleoptera and Lepidoptera in southwest Arkansas for those so interested.—Miss Louise Knobel, Route 2, Box 125a, Hope, Arkansas.

Wanted—Correspondence with collectors desiring to make a trip to South America to collect with me as a companion. Write—A. F. Porter, Decorah, Iowa.

E. A. Dodge of 546 Bay St., Santa Cruz, California, would be pleased to exchange with other W. S. Lepidopterists.

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